

CLAIMS:

- 5 1. A vehicle safety arrangement, the arrangement comprising:
a sensor unit comprising at least one sensor responsive to acceleration,
the sensor unit being located substantially along a central longitudinal line of
the vehicle;
an actuator for activating a safety device, the actuator being located
10 remotely from the sensor unit; and
a control unit located remotely from the sensor unit and from the
actuator, the control unit being operable to receive information from the sensor
unit and to transmit an actuating command to the actuator to activate the safety
device, wherein the control unit comprises no sensors responsive to
15 acceleration, and the sensor unit comprises a signal processor for sampling data
gathered by sensors of the sensor unit.
2. A safety arrangement according to Claim 1, wherein the sensor unit is
located on a central tunnel of the vehicle.
- 20 3. A safety device according to Claim 1 or 2, wherein the sensor unit
comprises at least two sensors responsive to acceleration, which are configured
to measure at least longitudinal and lateral acceleration of the vehicle.
- 25 4. A safety arrangement according to any preceding Claim, wherein the at
least one sensor responsive to acceleration is configured to measure vertical
acceleration of the vehicle.

5. A safety arrangement according to any preceding Claim, wherein the signal processor is operable to transmit the sampled data to the control unit.
6. A safety arrangement according to any preceding Claim, wherein the signal processor is operator to perform a crash algorithm, which causes the signal processor to instruct the control unit to transmit the actuating command to the actuator.
7. A safety arrangement according to any one of Claims 1 or 5, wherein the signal processor is operable to receive the output of a decision algorithm, which determines whether the vehicle is in a crash situation.
8. A safety arrangement according to Claim 7, wherein the decision algorithm is performed in the control unit.
9. A safety arrangement according to any preceding Claim, wherein the signal processor is operable to receive data from other remote sensors.
10. A safety arrangement according to any preceding Claim, wherein the sensor unit comprises one or more sensors operable to measure an angular velocity of the vehicle around a longitudinal axis thereof.
11. A safety arrangement according to any preceding Claim, wherein the actuator comprises an ignitor for igniting a charge to activate the safety device.
12. A safety arrangement according to any preceding Claim, wherein the control unit comprises one or more capacitors configured to store sufficient energy to cause the actuator to activate the safety device.

13. A safety arrangement according to Claim 12, wherein the discharge of the one or more capacitors comprises the actuation command.
- 5 14. A safety arrangement according to any preceding Claim, wherein the actuator is located in a unit that also comprises a capacitor configured to store energy to activate the safety device, the capacitor being discharged to activate the safety device in response to the actuation command.
- 10 15. A safety arrangement according to any preceding Claim, further comprising at least one left side sensor on a left side of the vehicle and at least one right side sensor on a right side of the vehicle.
16. A safety arrangement according to any preceding Claim, wherein the control unit is connected to a main battery of the vehicle, and supplies power to the sensor unit and the actuator.
- 15 17. A safety arrangement according to any preceding Claim, wherein the sensor unit has a smaller volume than that of the control unit.
- 20 18. A safety arrangement according to Claim 17, wherein the sensor unit has a volume less than half that of the control unit.
19. A safety arrangement according to any preceding Claim, wherein the sensor unit has a smaller mass than that of the control unit.
- 25 20. A safety arrangement according to Claim 19, wherein the mass of the sensor unit is less than half that of the control unit.

21. A safety arrangement according to any preceding Claim, wherein the sensor unit provided on a single microchip.

5 22. A safety arrangement according to any preceding Claim, wherein the sensor unit comprises a processor.

23. A vehicle comprising a safety arrangement according to any preceding Claim.